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Abstract

This paper shows that global capital markets cannot, by themselves, achieve net transfers of financial capital between countries and that both the integration of global financial markets as well as the integration of global goods markets are needed to achieve net transfers of capital between countries. Frictions (barriers to mobility) in one or both of these markets can impede net transfers of capital between countries, produce the Feldstein and Horioka (1980) results, and prevent real interest rates from being equalized across countries. Moreover, there is empirical evidence that barriers to the mobility of goods and services are an important obstacle to international capital mobility.

JEL classification codes: F21, F32, F36, G15

Keywords: Barriers to capital mobility, Feldstein-Horioka paradox, Feldstein-Horioka puzzle, financial market integration, goods market integration, international capital flows, international capital mobility, net transfers of capital, real interest rate equalization, real interest rate parity, saving-investment correlations, trade frictions

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1. Introduction

Most academic economists presume that net transfers of capital between countries are possible as long as global financial markets are integrated and gauge the extent to which there are barriers to capital mobility by the extent to which net transfers of capital occur between countries. For example, Feldstein and Horioka (1980) and the subsequent research they spawned find high cross-country correlations between domestic saving and domestic investment, which imply that the vast majority of incremental domestic saving is invested at home rather than abroad, and conclude from this finding that there must be considerable barriers to international capital mobility (see Apergis and Tsoumas (2009) for a useful survey of this literature).

Another oft-used gauge of barriers to capital mobility is the extent to which real interest rates are equalized across countries, and the finding of Mishkin (1984) and others that real interest rates are *not* equalized across countries is cited as further evidence of the existence of barriers to capital mobility.

In reality, however, global financial markets cannot, by themselves, achieve net transfers of financial capital, and the integration of global financial markets is a necessary but not sufficient condition for achieving net transfers of capital between countries. It is true that gross transfers of financial capital can and will take place in both directions if global financial markets are integrated, but *net* transfers of financial capital can occur only if, in addition, global goods markets are also integrated. Consequently, although frictionless financial markets may allow an individual agent's financial capital to be "perfectly mobile" between countries, this does not correspond to capital being "perfectly mobile" in the sense of rapid *net* transfers of financial capital between countries occurring. This would additionally require the absence of frictions in goods markets (e.g., transport, marketing and distribution costs, technical standards, certification procedures, tariffs and non-tariff trade barriers, etc.).

To the best of our knowledge, Niehans (1986) is the first economist to have made the

point that global financial markets cannot by themselves achieve net transfers of capital between countries, but he does not explain why this is the case and he does not seem to realize that it is frictions in global goods markets that impede net transfers of both financial and real capital between countries.

By contrast, Obstfeld and Rogoff (2000) do point out that barriers to the mobility of good and services may impede net transfers of capital between countries from being achieved but fail to point out that global financial markets cannot, by themselves, achieve net transfers of financial capital between countries.

To the best of our knowledge, this is the first paper to synthesize the views of Niehans (1986) and Obstfeld and Rogoff (2000) and to show that global capital markets cannot, by themselves, achieve net transfers of financial capital between countries and that both the integration of global financial markets as well as the integration of global goods markets are needed to achieve net transfers of capital between countries. Frictions (barriers to mobility) in either of these markets can impede net transfers of both real and financial capital between countries, produce the Feldstein and Horioka (1980) results, and prevent real interest rates from being equalized across countries. Moreover, there is empirical evidence that barriers to the mobility of goods and services are an important obstacle to international capital mobility (see, for example, Eaton, Kortum, and Nieman (2015)).

2. An Anecdotal Example

A more rigorous formulation of the line of argumentation presented in this paper can be found in Ford (2015), but a simple anecdotal example will suffice to illustrate our point. In scenario 1, let us assume that there are no barriers to capital mobility or to the mobility of goods and services. Let's further assume that Ms. Tanaka, a Japanese investor, wants to purchase the dollar equivalent of 100,000 yen worth of corporate bonds from Ford Motor Company. She will be able to do so because we assume that there are no barriers to capital mobility. Ms. Tanaka will simply convert 100,000 of her Japanese yen to U.S.

dollars and use these dollars to buy Ford bonds. This means that 100,000 yen worth of financial capital has moved from Japan to the U.S.

But the story does not end there. Let us assume that Mr. Smith, an American consumer, is the one who sold the U.S. dollars to Ms. Tanaka in exchange for her Japanese yen. Mr. Smith now has 100,000 yen in Japanese currency. Let's further assume that Mr. Smith is an avid manga fan and wants to buy 100,000 yen worth of Japanese comic books. Since we assume that there are no barriers to the mobility of goods and services including comic books, Mr. Smith will be able to import a 100,000 yen stock of comic books from Japan and pay for them using the 100,000 yen he received from Ms. Tanaka. Thanks to both financial and goods markets being fully integrated, the end result is that there has been a 100,000 yen net transfer of financial capital from Japan to the U.S. as a result of Ms. Tanaka transferring her 100,000 yen from Japan to the U.S. to purchase Ford bonds and that there has simultaneously been a net transfer of real capital from Japan to the U.S. as a result of Mr. Smith transferring a 100,000 yen stock of comic books from Japan to the U.S.

By contrast, in scenario 2, let us assume that there are no barriers to the mobility of financial capital but that there are prohibitive barriers to the mobility of goods and services including comic books. As in the case of scenario 1, Ms. Tanaka will be able to convert 100,000 of her Japanese yen to U.S. dollars and uses these dollars to buy the corporate bonds of Ford Motor Company. However, the behavior of Mr. Smith will change relative to scenario 1 because he will no longer be able to import comic books from Japan. Let us further assume that Mr. Smith reluctantly decides instead to purchase the corporate bonds of Toyota Motor Corporation using his Japanese yen, which he can do since we assume that there are no barriers to the mobility of financial capital. In this case, there will be gross transfers of financial capital in both directions between Japan and the U.S. but no net transfers of financial capital between the two countries because Ms. Tanaka's purchases of Ford bonds will be exactly offset by Mr. Smith's purchase of Toyota bonds. This result arises not because there are barriers to the mobility of financial capital but because there are barriers to the mobility of goods and services.

In scenario 3, let us assume that there are no barriers to the mobility of goods and services including comic books but that there are barriers to the mobility of financial capital. As in the case of scenario 1, Mr. Smith will be able to buy 100,000 yen worth of Japanese comic books (say from Ms. Tanaka). However, Ms. Tanaka will not be able to purchase the corporate bonds of Ford Motor Company using the U.S. dollars she receives from Mr. Smith. If she instead chooses to buy American comic books using her U.S. dollars, there will be not be any net or gross transfers of financial capital between the two countries.

Finally, in scenario 4, let us assume that there are barriers to the mobility of financial capital as well as to the mobility of goods and services including comic books. Under such circumstances, Ms. Tanaka will not be able to buy the corporate bonds of Ford Motor Company so she will have to settle for buying the corporate bonds of Toyota Motor Corporation. Similarly, Mr. Smith will not be able to buy Japanese comic books so he will have to settle for buying American comic books. Thus, there will not be any gross or net transfers of capital (or of goods and services) between the two countries.

In scenario 2, the transactions cost of purchasing foreign assets might be so low that, from their own perspectives, both Ms. Tanaka and Mr. Smith might regard their own capital as being "perfectly mobile" between countries. However, this still does not lead to any net mobility of capital, either real or financial, between countries. Net capital transfers will occur only when there is a net transfer of goods and services between the two countries (scenario 1). There will be no net transfers of capital between the two countries if there are barriers to the mobility of either financial capital and/or goods and services between the two countries (scenarios 2, 3, and 4). Thus, it is presumably a combination of scenario 2 (which assumes barriers to the mobility of good and services) and scenario 3 (which assumes barriers to the mobility of financial capital) that leads to the Feldstein and Horioka (1980) finding of high saving-investment correlations and prevents real interest rates from being equalized across countries.

Furthermore, there is empirical evidence suggesting that scenario 2 is an important

explanation of the Feldstein and Horioka (1980) results. For example, Eaton, Kortum, and Neiman (2015) find that the Feldstein and Horioka (1980) puzzle is greatly attenuated if trade frictions are assumed not to exist.

3. Summary and Conclusion

This paper has shown that global capital markets cannot, by themselves, achieve net transfers of financial capital between countries and that both the integration of global financial markets as well as the integration of global goods markets are needed to achieve net transfers of both real and financial capital between countries. Frictions (barriers to mobility) in one or both of these markets can impede net transfers of capital between countries, produce the Feldstein and Horioka (1980) results, and prevent real interest rates from being equalized across countries. Moreover, there is empirical evidence that barriers to the mobility of goods and services are an important obstacle to international capital mobility.

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